



AFMS Science and Technology Needs Analysis

S&T for the Human:
-- as a Weapon System
-- in the Weapon System

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AF Human Systems Acq. Background

- Clear user requirements & timely acquisition
- Technology Master Process (early 1990s)
 - Mission Area Plans (MAPs)
 - Deficiencies > tech needs (R&D) > solu's COTS
 - Technical Planning IPT (TPIPTs)
- Problem: Human needs cut across all MAPs
- AFMS C.C.s > Performance Enhancement

BACKGROUND:

AF Medical Service Perspective

Primary Issue: AF/SG* Concerns about the Divestiture of Human Performance and Effectiveness Research Capabilities

Other Drivers

**Mar 12 1998 AF/SG & AFRL/CC VTC
w/MAJCOMs**

Jan 99 Human Effectiveness S&T Cuts

Absence of an AFMS prioritized S&T list for operational medical support of Air Force capabilities

TWO WORKSHOPS: FOCUS

**SCIENCE AND TECHNOLOGY (S&T)
EFFORTS TO SUPPORT AIR FORCE
OPERATIONAL CAPABILITIES WITH
DIRECT HUMAN WEAPON SYSTEM
CONTRIBUTIONS**

Near to Far Term

FOCUS ELEMENTS

**INTEGRATION OF HUMANS INTO
AEROSPACE SYSTEMS**

**OPERATIONAL AEROSPACE
MEDICINE SUPPORTING THE
AEROSPACE OPERATOR IN THE
FLIGHTLINE, AIR AND SPACE
ENVIRONMENTS**

NON-CLINICAL S&T ISSUES

HUMAN WEAPON SYSTEM OPERATIONAL MEDICAL SUPPORT

What IT S NOT:

Combat Casualty Care

Infectious Disease

General Chem/bio

Peacetime Health Care Support

Aeromedical Evacuation

Environmental Safety and Health

**The Above Are Addressed By Other
Focus Groups And Will Be Managed by
AF/SG Staff**

TWO WORKSHOPS: PURPOSE

June: Identify Air Force Capabilities (Near, Mid, Far Term) that need Human Weapon System S&T in order to be realized.

[Done: List of 18 Capabilities]

July: Develop the Actual Deficiencies and S&T Needs that Underlie each of these Capabilities

[Done: List of 77 Deficiencies by Thrust Group]

CAPABILITIES SUPPORTED

CONDUCT SUSTAINED OPS

**SURVIVE AND OPERATE--ALL ENVIRONMENTS,
WITHOUT PERFORMANCE DEGRADATION**

**PERFORMANCE, SUSTAINMENT, PROTECTION
DATA TO DECISION-MAKING**

CREW/HUMAN SYSTEM INTEGRATION

COMPLEX TASKS WITHOUT DEGRADED SA

**CONDUCT REALISTIC TRAINING WITHOUT
MISHAPS**

SCREENING AND SELECTION IMPROVEMENTS

COGNITIVE SKILLS / LEARNING

DEFICIENCIES SUMMARY

SUSTAINED OPS

**PERFORMANCE ENHANCEMENT, SUSTAINMENT AND
PROTECTIVE GEAR**

**SITUATIONAL AWARENESS, SENSORS, AI , SPATIAL D
GROUP**

SELECTION, ANTHROPOMETRY, ERGONOMICS

WORKLOAD, COGNITIVE PERFORMANCE

PERFORMANCE ASSESSMENT

WEAPONS GROUP (LEP, DE, NLT)

CLINICAL AND AEROSPACE MED (Health/Performance)

COMM, INFO TRANSFER AND MANAGEMENT

MODELLING AND SIMULATION

ACTIONS AFTER JUNE WORKSHOP I

**Capabilities (List of 18) Coordinated (by
AFMOA) with all MAJCOMs: SG & DO**

No Adds , Deletes , or Changes

**Near Term Operational Science Support
Needs Described**

Essential Core Capabilities Stated

**[Military Unique Human Systems Science
Capabilities to Support Operational
Capabilities (Near to Far Term)]**

ACTIONS AFTER JULY WORKSHOP II

**List of 77 HWS Deficiencies
Coordinated with MAJCOM/SGs
S&T Needs Documents Written by
MAJCOM SGPAs and 311th HSW
Core Capabilities to be Retained:
Coordinated with MAJCOM/SGs**

ESSENTIAL CORE CAPABILITIES NEEDED TO SUPPORT NEAR TERM OPERATIONAL SCIENCE REQUIREMENTS

SCIENTISTS for:

Sustained Operations

Crew Systems and Life Support

Human Systems Integration

BioEffects Sciences

Clinical Aerospace and Occupational

Sciences

THE S&T STRATEGY

DELIVERED:

**18 Operational Air Force
Capabilities**

with key HWS component

77 Deficiencies by Thrust Area

17 S&T Needs Documented

**AF Investment in Core Science
Capabilities Described**

SUMMARY

“Captured the needs of the MAJCOM warfighters, expressed through the AFMS, to solve gaps in science and technology for human contributions to operational capabilities.”

“Identified these needs in time for the FY 02-07 POM, and identified near term operational science support needs.”

QUESTIONS
or
COMMENTS ?